217/782-2113

CONSTRUCTION PERMIT -- NSPS
"REVISED"

PERMITTEE

Indeck-Pleasant Valley, LLC
Attention: James S. Schneider
600 North Buffalo Grove Road
Buffalo Grove, Illinois 60089

Application No: 98100061 I.D. No.: 111805AAO
Applicants Designation: Indeck-Pleasant Valley Date Received: October 19, 1998
Subject: Gas Turbines (Power Production)
Date Issued: March 4, 1999
Location: South State Route 47, Woodstock

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of two gas turbines as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. The turbines are subject to the New Source Performance Standard (NSPS) for Stationary Gas Turbines, 40 CFR 60, Subpart A and GG. The Illinois EPA is administrating NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

b. The Permittee shall not emit into the atmosphere from any turbine any gases which contain nitrogen oxides (NO_X) in excess of the following equation, pursuant to 40 CFR 60.332 (a)(1), except as allowed by 40 CFR 60.332(f):

$$STD = 0.0075\left(\frac{14.4}{Y}\right) + F$$

where:

STD = allowable NO_X emission (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacture's rated load (kilojoules per watt hour) or , actual measured heat rate based on lower heating value of fuel as measured as actual peak load for the facility. The value of *Y* shall not exceed 14.4 kilojoules per watt-hour.

F = NO_X emission allowance for fuel-bound nitrogen as defined in 40 CFR 60.332 (a)(3).

c. The Permittee shall not emit into the atmosphere from any turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis, or shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight, pursuant to 40 CFR 60.333 (a) and (b).

d. At all times, the Permittee shall maintain and operate the turbines in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to the NSPS, 40 CFR 60.11(d).

2. The turbines are affected units under the Acid Rain Deposition Control Program pursuant to Title IV of the Clean Air Act and are subject to certain control requirements and emissions monitoring requirements pursuant to 40 CFR Parts 72, 73 and 75. As affected units under the Acid Rain Program, Indeck-Pleasant Valley, LLC must also obtain an Acid Rain Permit for operation of the turbines in accordance with 40 CFR 70.30(a)(2)(ii) and 72.32(a).

3. The turbines shall each be equipped, operated, and maintained with Low NO_X combustors.

4a. The only fuel fired at the facility shall be natural gas.

b. Combined operation of the turbine units shall not exceed more than 3,000 hours per year. Compliance with this limit shall be determined from a running total of 365 days of data.

c. i. Hourly emissions from each turbine shall not exceed the following limits:

Nitrogen oxides (lb/hr)	Carbon Monoxide (lb/hr)	Particulate Matter/ PM_{10} (lb/hr)	Sulfur Dioxide (lb/hr)
86.5	52.7	10.0	1.0

ii. When the ambient temperature is less than 59 °F, hourly emission from each turbine shall not exceed 99.6 and 60.4 lb/hr for NO_X and CO, respectively.

These limits are based on the information provided in the permit application.

d. The annual emissions from the facility shall not exceed the following limitations. Compliance with the annual limitations shall be determined from a running total of 12 months of data.

Pollutant	Emissions (tons/year)
NO_X	130
CO	79.1
PM/PM_{10}	15
SO_2	10

The above limits are established pursuant to 40 CFR 52.21, the federal rules for Prevention of Significant Deterioration of Air Quality (PSD). These limits ensure that the construction and operation of the turbines do not constitute a new major source pursuant to PSD.

5. The emission of smoke or other particulate matter from a turbine shall not have an opacity greater than 30 percent, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 201.149, 212.123(b) or 212.124.

6a. Under this permit, each turbine may be operated for a period of up to 180 days from initial startup to allow for equipment shakedown and emissions testing as required. This period may be extended by the Illinois EPA upon request of the Permittee if additional time is needed to complete startup or perform emission testing.

b. Upon successful completion of emission testing demonstrating compliance with applicable limitations, the Permittee may continue to operate the facility as allowed by Section 39.5 (5) of the Environmental Protection Act.

7. The Permittee shall furnish the Illinois EPA with written notification as follows:

a. The date construction of the turbine commenced, postmarked no later than 30 days after such date, pursuant to 40 CFR 60.7(a)(1).

b. The anticipated date of initial startup of the turbine, postmarked not more than 60 days nor less than 30 days prior to such date, pursuant to 40 CFR 60.7(a)(2).

c. The actual date of initial startup of the turbine, postmarked within 15 days after such date, pursuant to 40 CFR 60.7(a)(3).

8. Each turbine shall each be equipped, operated, and maintained with a continuous monitoring system to monitor and record the fuel consumption, pursuant to 40 CFR 60.334 (a).

9. The Permittee shall monitor sulfur content of the fuel being fired in the turbines as follows, pursuant to USEPA Custom Fuel Monitoring Document dated August 14, 1987.

a. Compliance with the sulfur content standard in 40 CFR 60.333(b) (Condition 1(c)) shall be determined by using ASTM D 1072-80, D 3031-81, D 4084-82, or D3246-81 for gaseous fuels, pursuant to 40 CFR 60.335(d). The analysis may be performed by the Permittee, a service contractor retained by the Permittee, the fuel vendor, or any other qualified agency, pursuant to 40 CFR 60.335(e).

b. i. Sulfur monitoring shall be conducted monthly for six months.

ii. If monthly monitoring indicates consistent compliance with 40 CFR 60.333(b), then sulfur monitoring shall be conducted once per quarter for six quarters.

iii. If quarterly monitoring indicates consistent compliance with 40 CFR 60.333(b), then sulfur monitoring shall be conducted at least annually.

c. Should any sulfur monitoring as required in Condition 9(b) above indicate noncompliance with 40 CFR 60.333(b), the Permittee shall notify the Illinois EPA of such excess sulfur contents and return to monthly monitoring in accordance with Condition 9(b).

d. If there is a change in fuel supply, the Permittee must promptly notify the Illinois EPA of such change.

10a. This permit is issued based on the turbines being gas-fired peaking units, as specified in 40 CFR Part 75, so that continuous emission monitoring is not required for NO_X. To maintain this status, the three year rolling average annual capacity factor of a turbine shall not be greater than 10 percent, and the highest annual capacity factor shall not be greater than 20 percent in any one of the three averaging years.

b. Should the operation of a turbine exceed the above requirements relating to the definition of a gas-fired peaking unit in 40 CFR 75, the Permittee shall install the appropriate Continuous Monitoring System(s) on the turbine by December 31 of the following calendar year, as defined in 40 CFR 75, in order to remain in compliance with the provisions of the Acid Rain Program.

11. Monitoring of fuel nitrogen content is not required as natural gas is the only fuel fired in the turbines, pursuant to USEPA Custom Fuel Monitoring Document dated August 14, 1987.

12a. Within 60 days after achieving the maximum production rate at which the natural gas fired stationary gas turbines will be operated, but not later than 180 days after initial startup, the nitrogen oxides (NO_X), carbon monoxide (CO), and oxygen (O_2) concentrations in the exhaust of the turbines shall be measured by an approved independent testing service to determine compliance with the NO_X and CO limits in Condition 1 and 4 in the following manner:

i. The NO_X emission rate shall be computed for each run using the equation in 40 CFR 60.335(c)(1).

ii. Method 20 of 40 CFR 60, Appendix A, shall be used to determine the NO_X and O_2 concentrations. The span values shall be 300 ppm of NO_X and 21 percent O_2, pursuant to 40 CFR 60.335(c)(3).

iii. The NO_X emissions shall be determined at four points in the normal operating range of the turbine, including the minimum point in the range and peak load, pursuant to 40 CFR 60.335(c)(2).

iv. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer, pursuant to 40 CFR 60.335(c)(2).

v. Method 10 of 40 CFR 60, Appendix A, shall be used to determine CO concentrations at peak turbine load.

vi. The test at each load shall consist of three separate runs each at least 60 minutes in duration. Compliance shall be determined from the average of the runs provided that the Illinois EPA may accept the arithmetic mean of two of the runs in circumstances described in 40 CFR 60.8(f).

b. The Permittee shall submit a test plan to the Illinois EPA at least 60 days prior to testing. As part of this plan, the Permittee may propose for approval by the Illinois EPA a strategy for performing emission testing of selected turbines provided that all turbines are fitted for testing; the identity of the engines to be tested is determined immediately before testing, by the Illinois EPA or otherwise randomly. The Permittee may also propose a strategy for testing across the normal load range of the turbines.

c. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may, at its discretion, accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.

d. The Final Report for these tests shall be submitted to the Illinois EPA within 60 days after the date of the tests. The Final Report shall include as a minimum:

i. A summary of results.

ii. General information.

iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.

iv. Detailed description of test conditions, including:

A. Fuel consumption (standard ft^3);

B. Firing rate (million Btu/hr); and

C. Turbine/Generator output rate (MW);

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

13a. The Permittee shall maintain records of the following items:

i. The sulfur contents of the fuel used to fire the turbines as determined in accordance with Condition 9;

ii. Fuel consumption for each turbine in accordance with Condition 8;

iii. Operating hours and fuel consumption for each turbine, on a daily basis;

b. The Permittee shall keep a maintenance/repair log for each turbine.

c. The Permittee shall maintain the following records on at least a quarterly basis:

i. Heat content of the natural gas (Btu/ft^3) being fired during the quarter, with supporting documentation;

ii. Fuel consumption for each turbine for each month since the previous record.

iii. The annual emissions of NO_X, SO_2, PM and CO for each month since the previous record with supporting calculations.

d. The Permittee shall maintain records that identify:

i. Any periods during which a continuous monitoring system was not operational, with explanation.

ii. Any day in which emission exceeded an applicable standard or limit.

e. These records shall be retained for three years and shall be available for inspection and copying by the Illinois EPA.

14. If there is any exceedance of the requirements of Conditions 1 through 4 of this permit, as determined by the records required by this permit, the Permittee shall submit a report within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

15. Two copies of required reports and notifications concerning equipment operation or repairs, performance testing, or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one copy shall be sent to the Illinois EPA's regional office at the following address, unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control – Regional Office
1701 South 1st Avenue, 6th Floor
Maywood, IL 60153

Telephone 708/338-7900 Facsimile 708/338-7930

It should be noted that this permit has been revised to set alternative limits for hourly NO_x and CO emissions when the ambient temperature is less than 59°F, consistent with the data from the turbine manufacture provided in the application

If you have any questions concerning this permit, please contact Troy Poorman at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:TDP

CC: Region 1